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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,488	10/29/2003	Motti Shechter	0208.0126C	5218
27896	7590	06/04/2004	EXAMINER	
EDELL, SHAPIRO, FINNAN & LYTLE, LLC 1901 RESEARCH BOULEVARD SUITE 400 ROCKVILLE, MD 20850			SAADAT, CAMERON	
			ART UNIT	PAPER NUMBER
			3713	

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/695,488

**Applicant(s)**

SHECHTER, MOTTI

**Examiner**

Cameron Saadat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-6, 8-9, 11, 13-14, 16-19-22, 24, 26, 28-29 are rejected under 35**

**U.S.C. 102(b) as being anticipated by Kustanovich (USPN 4,659,090).**

Regarding claim 1 and 16, Kustanovich discloses a method and apparatus for determining a location of an impact of a projectile upon a target space comprising: receiving projectile impacts upon an impact device surface, wherein the impact device includes a plurality of layers, and wherein at least one of the plurality of layers includes an electrically conducting sensor layer with at least one electrical property that changes in response to the impact from the projectile; monitoring the sensor layer of the impact device and determining a location of the projectile impact upon the impact device surface (Col. 1, lines 20-53).

Regarding claims 2 and 17, Kustanovich discloses a method and apparatus, further including the step of applying an electrical signal of known magnitude across the sensor layer (Col. 1, lines 45-48).

Regarding claims 3 and 18, Kustanovich discloses a method and apparatus, further including the step of measuring the electrical property at a plurality of measurement locations upon the sensor layer to establish a reference measurement for each of the plurality of measurement locations (Col. 3, lines 29-54).

Regarding claims 4 and 19, Kustanovich discloses a method and apparatus, further including the step of sampling the electrical property at a plurality of measurement locations to obtain a sample measurement at each of the measurement locations and comparing each of the sample measurements to a corresponding reference measurement to determine a deviation from the corresponding reference measurement (Col. 3, lines 29-54).

Regarding claims 5 and 20, Kustanovich discloses a method and apparatus, further including the step of determining the impact location of the projectile upon the impact device based upon the determined electrical property deviations (Col. 4, lines 4-6).

Regarding claims 6, 21-22, Kustanovich discloses a method and apparatus, wherein the impact device is physically aligned with a target space corresponding to at least one of a physical target and a generated virtual target, further including the step of correlating the impact device with the target space by associating at least one location upon the impact device with at least one corresponding location within the target space (See Fig. 1; Col. 4, lines 4-11).

Regarding claim 8, Kustanovich discloses a method, wherein the impact device is opaque and the impact device is aligned behind the target space (see Fig. 1)

Regarding claims 9 and 24, Kustanovich discloses a method and apparatus, further including the step of displaying at least one of a score value and an impact location on a target image (Col. 4, lines 30-33).

Regarding claim 11 and 26, Kustanovich discloses a method and apparatus wherein the target assembly further includes electronic processing instructions for processing the deviations (Col. 3, lines 43-54). Although a memory module for storing processing instructions is not

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explicitly disclosed, this feature is considered inherent in the operation of the disclosed processor.

Regarding claim 13 and 28, Kustanovich discloses a method and apparatus wherein the electrical property includes the resistance of a sensor layer (Col. 1, lines 48-53).

Regarding claim 14 and 29, Kustanovich discloses a method and apparatus wherein the electrical property includes the capacitance of a sensor layer (Col. 1, lines 43-48).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 7 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kustanovich (USPN 4,659,090) in view of Springer (USPN 4,305,142).**

Regarding claims 7 and 23, Kustanovich discloses all of the claimed subject matter with the exception of explicitly stating that the impact device is transparent. However, Springer teaches an impact sensing device that comprises a transparent layer (Col. 7, lines 1-6; Fig. 4).

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Hence, in view of Springer, it would have been obvious to one of ordinary skill in the art to modify the impact device described in Kustanovich, by providing a transparent impact device, in order to provide target lines, while allowing impact indicators to display through the transparent layer, thereby allowing a user to view impact locations.

**Claims 10, 15, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kustanovich (USPN 4,659,090) in view of Nuutinen (USPN 6,146,142; hereinafter Nuutinen).**

Regarding claims 10 and 25, Kustanovich discloses all of the claimed subject matter with the exception of explicitly disclosing the step of calibrating the determined impact location to account for environmental conditions. However, Nuutinen teaches a projectile targeting device wherein the determined impact location is calibrated to account for environmental conditions (See Abstract). Hence, in view of Nuutinen, it would have been obvious to an artisan to modify the targeting device described in Kustanovich, by providing a calibrated impact location to account for environmental conditions in order to inform a marksman of environmental conditions that may effect the trajectory of a projectile, thereby allowing a marksman to compensate for the environmental condition.

**Claims 12 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kustanovich (USPN 4,659,090) in view of (Oehler USPN 5,349,853).**

Regarding claims 12 and 27, Kustanovich discloses all of the claimed subject matter with the exception of explicitly disclosing a the step of comparing the determined deviation to a pre-defined threshold value; and determining the presence of a projectile impact in response to the determined deviation exceeding the pre-defined threshold value. However, Oehler teaches an

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impact-sensing device wherein a minimum threshold value must be exceeded in order to register a projectile impact (Col. 16, lines 24-36). Hence, in view of Oehler, it would have been obvious to modify the impact detection means described in Kustanovich, by requiring a value that exceeds a minimum threshold value, in order to avoid typical noise problems that may generate false impact locations.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Botarelli et al. (USPN 5,095,433) – disclose a target reporting system that senses vibrations of projectiles.
- Courtiol (USPN 4,131,012) – discloses a device for detecting impacts on a target wherein a threshold value is required to register a hit.
- Bowyer et al. (USPN 4,261,579) – disclose an impact sensing target
- Knight et al. (USPN 4,350,881) – disclose a projectile position detection apparatus.
- Sheck et al. (USPN 6,367,800) – disclose a projectile impact location determination system and method.
- Thomson et al. (USPN 5,669,608) – disclose a device including a plurality of layers for locating the position of impact of a projectile.

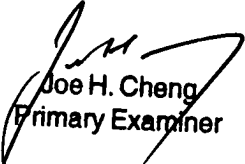
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cameron Saadat whose telephone number is 703-305-5490. The examiner can normally be reached on M-F 8:00 - 5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on 703-308-1745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CS

  
Joe H. Cheng  
Primary Examiner